

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
19 May 2005 (19.05.2005)

PCT

(10) International Publication Number
WO 2005/045864 A1

(51) International Patent Classification⁷: **H01H 9/26**

(21) International Application Number:
PCT/FI2004/000651

(22) International Filing Date:
3 November 2004 (03.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
20031604 5 November 2003 (05.11.2003) FI

(71) Applicant (for all designated States except US): **ABB OY**
[FI/FI]; Strömbergintie 1, FI-00380 Helsinki (FI).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KAJAN, Risto**
[FI/FI]; Läntinen Pitkätie 7 B, FI-65380 Vaasa (FI).

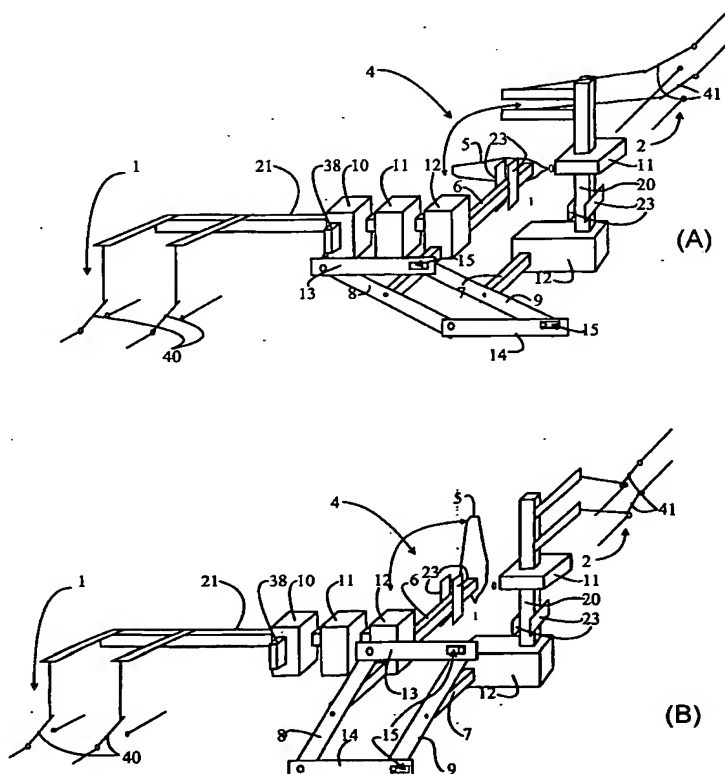
RAJALA, Erkki [FI/FI]; Sorvarinkatu 6, FI-65370 Vaasa (FI). **NÄHLS, Mikael** [FI/FI]; Nygårdstiet 2, FI-65800 Raippaluoto (FI). **PÖYHÖNEN, Simo** [FI/FI]; Albert Petreliuksen katu 6 D 33, FI-01370 Vantaa (FI). **VARPELA, Martti** [FI/FI]; Havukoskenkatu 1a A, FI-01360 Vantaa (FI). **TALJA, Markku** [FI/FI]; Myrnykuja 1 E, FI-04400 Järvenpää (FI).

(74) Agent: **SEPPO LAINE OY**; Itämerenkatu 3 B, FI-00180 Helsinki (FI).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: SWITCHING DEVICE COMBINATION FOR CAPACITIVE LOADS CONNECTED TO DIRECT VOLTAGE



(57) Abstract: This publication discloses a switching device combination for capacitive loads (3) connected to a direct voltage. The switching device combination includes an actual switch component (1) for connecting voltage to the capacitive load (3), a charging switch component (2) for connecting charging voltage to the capacitive load in the initial stage, which charging switch component is dimensioned for a lower current than the actual switch component (1), a controller component (4), by means of which the actual switch component (1) is controlled from an open state to a closed state and vice versa, with the aid of a mechanical lever (5), which is connected to a first shaft (6), and delay elements (11) for delaying the connection of the actual switch component (1), so that the closed charging switch component (2) will have time to charge the capacitive load (3) before the connection of the actual switch component (1). According to the invention, the controller component (4) includes a second shaft (7), which is operationally connected to the first shaft, in order to control the charging switch component (2).



(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*